

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An apparatus comprising:
a thermal management device;
a heat source; and
an interface disposed between the thermal management device and the heat source, the interface having a plurality of nanostructures, the nanostructures having a plurality of polymer molecules, the polymer molecules including deoxyribonucleic acid (DNA) molecules.
2. (Original) The apparatus of claim 1, wherein the thermal management device comprises a passive cooling device.
3. (Original) The apparatus of claim 2, wherein the passive cooling device comprises at least one of a heat sink, a heat spreader, heat pipes, and a heat slug.
4. (Original) The apparatus of claim 1, wherein the thermal management device comprises an active cooling device.
5. (Original) The apparatus of claim 4, wherein the active cooling device comprises at least one of an air jet impingement device and a dielectric liquid device.
6. (Currently Amended) The apparatus of claim 1, wherein the heat source comprises an integrated circuit (IC) die a rectangular piece of silicon material.
- 7.-12. (Canceled)
13. (Currently Amended) An apparatus comprising:
a thermal management device;
a heat source; and

an interface disposed between the thermal management device and the heat source, the interface having a plurality of nanostructures formed on the thermal management device and the heat source, the plurality of nanostructures formed on the thermal management device being coupled to the plurality of nanostructures formed on the heat source, wherein the plurality of nanostructures formed on the thermal management device and the plurality of nanostructures formed on the heat source have a plurality of molecules covalently coupling the nanostructures formed on the thermal management device and the plurality of nanostructures formed on the heat source, wherein the plurality of molecules comprises a flexible polymer molecule, and The apparatus of claim 12, wherein the flexible polymer comprises deoxyribonucleic acid (DNA) molecules.

14. (Original) The apparatus of claim 1, wherein the plurality of nanostructures comprises a plurality of carbon nanotubes.

15. (Currently Amended) A system comprising:
a wiring board;
a memory device electrically coupled to the wiring board;
a heat source electrically coupled to the wiring board;
a thermal management device coupled to the heat source; and
an interface disposed between the thermal management device and the heat source, the interface having a plurality of nanostructures, the nanostructures having a plurality of polymer molecules, the polymer molecules including deoxyribonucleic acid (DNA) molecules.

16. (Currently Amended) The system of claim [[14]] 15, wherein the wiring board comprises a printed circuit board.

17. (Original) The system of claim 15, wherein the memory device comprises a flash type memory device.

18. (Original) The system of claim 15 wherein the thermal management device comprises a passive cooling device.
19. (Original) The system of claim 18, wherein the passive cooling device comprises at least one of a heat sink, a heat spreader, heat pipes, and a heat slug.
20. (Original) The system of claim 15, wherein the thermal management device comprises an active cooling device.
21. (Original) The system of claim 20, wherein the active cooling device comprises at least one of an air jet impingement device and a dielectric liquid device.
22. (Original) The system of claim 15, wherein the heat source comprises an integrated circuit (IC) die.
- 23.-28. (Canceled)
29. (Currently Amended) A system comprising:
a wiring board;
a memory device electrically coupled to the wiring board;
a heat source electrically coupled to the wiring board;
a thermal management device coupled to the heat source; and
an interface disposed between the thermal management device and the heat source, the
interface having a plurality of nanostructures formed on the thermal management device and the
heat source, the plurality of nanostructures formed on the thermal management device being
coupled to the plurality of nanostructures formed on the heat source, wherein the plurality of
nanostructures formed on the thermal management device and the plurality of nanostructures
formed on the heat source have a plurality of molecules covalently coupling the nanostructures
formed on the thermal management device and the plurality of nanostructures formed on the heat

source, wherein the plurality of molecules comprises a flexible polymer, and The system of
claim 28, wherein the flexible polymer comprises deoxyribonucleic acid (DNA) molecules.

30. (Currently Amended) A semiconductor package comprising:
a thermal management device;
~~a heat source~~ an integrated circuit; and
an interface disposed between the thermal management device and the ~~heat source~~
integrated circuit, the interface having a plurality of nanostructures, the nanostructures having a
plurality of polymer molecules, the polymer molecules including deoxyribonucleic acid (DNA)
molecules.
31. (Original) The semiconductor package of claim 30, wherein the thermal management device comprises a passive cooling device.
32. (Original) The semiconductor package of claim 30, wherein the thermal management device comprises an active cooling device.
- 33.-37. (Canceled)
38. (New) The apparatus of claim 30, wherein the nanostructures include a plurality of carbon nanotubes.
39. (New) An apparatus comprising:
a thermal management device;
a heat source;
a plurality of first nanostructures attached to the thermal management device; and
a plurality of second nanostructures attached to the heat source, wherein the first nanostructures are interleaved with the second nanostructures.

40. (New) The apparatus of claim 39, wherein at least one of the plurality of first nanostructures and the plurality of second nanostructures includes a plurality of polymer molecules, the polymer molecules including deoxyribonucleic acid (DNA) molecules.

41. (New) The apparatus of claim 39, wherein the first nanostructures and the second nanostructures are disposed in a predetermined pattern.

42. (New) The apparatus of claim 39, wherein the thermal management device includes at least one of a passive cooling device and an active cooling device.

43. (New) The apparatus of claim 39, wherein at least one of the plurality of first nanostructures and the plurality of second nanostructures includes a plurality of carbon nanotubes.

44. (New) A method comprising:

forming an interface between a thermal management device and a heat source to transfer heat from the heat source to the thermal management device, wherein forming the interface includes forming a plurality of nanostructures, the nanostructures having a plurality of polymer molecules, the polymer molecules including deoxyribonucleic acid (DNA) molecules.

45. (New) The method of claim 44, wherein forming the plurality of nanostructures includes forming a plurality of carbon nanotubes.

46. (New) The method of claim 44, wherein forming the plurality of nanostructures includes: forming a first portion of the nanostructures on the thermal management device; and forming a second portion of the nanostructures on the heat source.